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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,032	06/12/2006	Peter Allan Anderson	P08766US00/BAS	6776

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EXAMINER	
VAN OUDENAREN, SARAH A	
ART UNIT	**PAPER NUMBER**
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/553,032	ANDERSON ET AL.	
	Examiner	Art Unit	
	SARAH VAN OUDENAREN	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/11/2005 and 7/10/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suarez et al (CA 2,256,560).

Suarez teaches a process for nickel and cobalt recovery which involves nickel and cobalt intermediate products which are leached with an ammonia-ammonium carbonate solution (page 1, lines 5-10). The ammonia-ammonium carbonate solution is treated to obtain a mixed nickel/cobalt sulphide (pages 5-6, lines 30-35 and 0-3).

Although, Suarez does not explicitly teach the mixed sulphide as a reductant, it would have been obvious to one of ordinary skill in the art at the time of the invention to consider the sulphide as a reductant in so far as the carbonate solution is treated in order to produce the sulphide so they would both be considered present within the leach step and the sulphide would inherently act as a reductant.

It is noted that the nickel and cobalt intermediate products are considered the nickel and cobalt material.

Regarding claims 2 and 15, applicant states that nickel and cobalt intermediate products are mixed impure nickel/cobalt carbonates, basic carbonates, basic sulphates or hydroxides (applicant's page 1, lines 10-15).

Regarding claims 3 and 16, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose a mixed nickel/cobalt hydroxide material as it is produced as an intermediate product.

Regarding claims 4 and 17, Suarez teaches the ammonia-ammonium carbonate solution is a part of the Caron process (page 1, lines 10-15).

Regarding claims 5 and 21, Suarez teaches the solution being treated to precipitate a mixed nickel/cobalt sulphide which would inherently act as a reductant (pages 5-6, lines 30-5).

Regarding claims 6 and 22, Suarez teaches the solution being treated to precipitate a mixed nickel/cobalt sulphide which would inherently act as a reductant (pages 5-6, lines 30-5).

Regarding claims 7 and 23, Suarez teaches the ammonia-ammonium carbonate solution being treated with ammonium hydrosulphide to precipitate a mixed nickel/cobalt sulphide (pages 5-6, lines 30-5).

Regarding claims 8 and 24, Suarez teaches the ammonia-ammonium carbonate solution is a part of a Caron process (page 1, lines 10-15) and it is used in the process taught (page 1, lines 0-5) therefore it would be inferred that as the solution is produced by a Caron process and it is used within the process it would constitute a portion of the feed being of a Caron process.

Regarding claim 9, Suarez teaches the ammonia-ammonium carbonate solution being used in the leaching of the material (page 1, lines 1-10) and that the solution is treated to precipitate a mixed nickel/cobalt sulphide (pages 5-6, lines 30-5). It would

have been obvious to one of ordinary skill in the art at the time of the invention to recognize that the sulphide would inherently act as a reductant.

Regarding claims 10, 20, and 25, Suarez teaches an ore having 1.26 wt% Ni, 0.099 wt % Co and a solution containing 65 g/L NH_3 and 35 g/L CO_2 being combined (page 7, example 1, lines 25-35) which is within the instantly claimed ranges. Further, as the solution is of a Caron process and the material is an intermediate product of the ore, it would have been obvious to one of ordinary skill in the art at the time of the invention to assume that the ranges are inherent as they are produced by the same processes.

Regarding claims 11 and 27, Suarez teaches the mixture being placed in a turboaerator (page 1, lines 28-30).

Regarding claims 12 and 28, Suarez teaches the turboaeration is done for a period of 1.5-3 hours (page 1, lines 28-30) and does not exceed 60°C (page 3, lines 5-10). It would have been obvious to one of ordinary skill in the art at the time of the invention to perform this process at atmospheric or elevated pressure as a reduced pressure would not be economically feasible considering the reasonably low temperatures of the process.

Regarding claims 13 and 29, Suarez teaches an air or oxygen injection done between 5seconds -15 minutes (page 3, lines 8-10).

Regarding claim 14, Suarez teaches a process for nickel and cobalt recovery which involves nickel and cobalt intermediate products which are leached with ammonia-ammonium carbonate solution (page 1, lines 5-10). The ammonia-ammonium

carbonate solution is treated to obtain a mixed nickel/cobalt sulphide (pages 5-6, lines 30-35 and 0-3). Suarez also teaches a primary, secondary, or various additional stages as to leaching, separation, or resin extraction to increase the efficiency of the process (page 4, lines 10-15).

Although, Suarez does not explicitly teach the mixed sulphide as a reductant, it would have been obvious to one of ordinary skill in the art at the time of the invention to consider the sulphide as a reductant in so far as the carbonate solution is treated in order to produce the sulphide so they would both be considered present within the leach step and the sulphide would inherently act as a reductant.

It is noted that the nickel and cobalt intermediate products are considered the nickel and cobalt material.

Regarding claim 18, Suarez teaches a second leaching stage (page 4, lines 5-10) and also shows the product being returned to the beginning of the outlined process in figures 3a and 3b.

Regarding claim 19, Suarez teaches that the outlined process can be used for various additional leaching stages and resin extraction (page 4, lines 10-15) and that the material is treated with an ammonia-ammonium carbonate solution (page 1, lines 1-10) for a period of 1.5-3 hours (page 1, line 29) which would be considered an elongated time of exposure.

Regarding claim 26, Suarez teaches the efficiency of the Ni and Co adsorption is 99-100% and the eluting solution has 40-140 g/L NH_3 and 70-100 g/L CO_2 which overlaps the ranges (page 4, lines 28-31). As Suarez teaches the adsorption is 99-

100% it would be assumed that the eluting solution would therefore have traces amounts of nickel and cobalt.

Regarding claim 30, Suarez teaches the second leaching stage, as well as the various additional leaching stages are done as outlined in the first leaching stage (page 4, lines 5-15). So it would therefore be obvious to one of ordinary skill in the art at the time of the invention to utilize the mixed sulphide as the reductant in the second step because it was also used in the first leaching step.

Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suarez et al (CA 2,256,560) as applied to claims 1 and 14 above, and further in view of Einart et al (CA 618,826).

Suarez teaches a process for nickel and cobalt recovery which involves nickel and cobalt intermediate products which are leached with an ammonia-ammonium carbonate solution as discussed above.

Suarez does not explicitly teach the material being a mixed nickel/cobalt hydroxide.

Einart teaches a process for recovering nickel and cobalt from oxidic ores by leaching with ammoniacal leach liquor (page 2, lines 1-10). Applicant teaches that the intermediate product produced is a mixed nickel/cobalt hydroxide (applicant page 1, lines 20-25).

It would have been obvious to one of ordinary skill in the art to utilize the mixed nickel/cobalt hydroxide of Einart with the process of Suarez as it is taught by applicant

to be an intermediate product as in Suarez and is used for the same objective of recovering nickel and cobalt.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARAH VAN OUDENAREN whose telephone number is (571)270-5838. The examiner can normally be reached on Monday-Thursday, 9:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SVO
November 18, 2008

/Melvin Curtis Mayes/
Supervisory Patent Examiner, Art Unit 1793